

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-24. (cancelled)

25. (currently amended) A process for the preparation of a composition of nanoparticles of at least one crystalline metal oxide from at least one organometallic precursor, said process comprising:

- selecting at least one organometallic precursor that is spontaneously reactive to oxidation,

- producing a liquid solution of said at least one precursor in a non-aqueous solvent medium, and

- contacting said liquid solution with at least one oxidizing agent selected from the group consisting of water, ambient air, and pure dioxygen gas at ambient temperature to thereby under reaction conditions chosen so as to directly bring about the production of nanoparticles of crystalline metal oxide(s).

26. (previously presented) The process as claimed in claim 25, wherein said solvent medium comprises at least one

compound, called a ligand, selected from the group consisting of the bases and the acids.

27. (previously presented) The process as claimed in claim 26, wherein there is chosen at least one of said ligand that is not volatile at the reaction temperature and that acts as a dispersing agent for the composition produced in the solvent medium.

28. (previously presented) The process as claimed in claim 26, wherein an aliphatic organic compound is used as the ligand.

29. (previously presented) The process as claimed in claim 26, wherein an organic compound containing an unbranched aliphatic chain having from 6 to 20 carbon atoms is used as the ligand.

30. (previously presented) The process as claimed in claim 26, wherein at least one of said ligand is selected from the group consisting of the amines, the acids, the thiols, the phosphorus derivatives and the ethers.

31. (previously presented) The process as claimed in claim 26, wherein at least one of said ligand is selected

from the group consisting of hexadecylamine, dodecylamine, octylamine, dodecylthiol, octanoic acid, oleic acid, and lauric acid.

32. (previously presented) The process as claimed in claim 26, wherein at least one base and at least one acid are chosen as the ligands.

33. (previously presented) The process as claimed in claim 25, wherein said solvent medium comprises at least two separate compounds.

34. (previously presented) The process as claimed in claim 26, wherein said solvent medium comprises at least one of said ligand and at least one compound that is volatile under the reaction conditions and gradually evaporates during the oxidation.

35. (previously presented) The process as claimed in claim 34, wherein said solvent medium is formed of THF and an aliphatic primary amine.

36. (cancelled)

37. (**currently amended**) The process as claimed in claim 25, wherein said reaction conditions comprise ambient temperature process does not involve thermal treatment to produce said nanoparticles of crystalline metal oxides.

38. (**previously presented**) The process as claimed in claim 25, wherein said at least one oxidizing agent is selected from the group consisting of dioxygen, water vapour, the organic oxidizing agents, and the other non-organic oxidizing agents.

39. (**previously presented**) The process as claimed in claim 25, wherein said reaction conditions comprise carrying out the oxidation without stirring the liquid solution.

40. (**previously presented**) The process as claimed in claim 25, wherein said solvent medium is non-alcoholic.

41. (**previously presented**) The process as claimed in claim 25, wherein, for the preparation of nanoparticles of crystalline zinc oxide, zinc dicyclohexyl $Zn(C_6H_{11})_2$ is chosen as precursor.

42. (previously presented) The process as claimed in claim 25, wherein, for the preparation of nanoparticles of tin oxide, at least one organometallic precursor is selected from the group consisting of tin bis(bis(dimethylamide)) $[\text{Sn}(\text{N}(\text{CH}_3)_2)_2]_2$ and tin dicyclopentadienyl $\text{Sn}(\text{C}_5\text{H}_5)_2$.

43. (previously presented) The process as claimed in claim 25, wherein, for the preparation of indium oxide, indium cyclopentadienyl $\text{In}(\text{C}_5\text{H}_5)$ is chosen as precursor.

44. (previously presented) The process as claimed in claim 25, wherein, for the preparation of a mixed metal oxide, at least two separate precursors are chosen from the group consisting of zinc dicyclohexyl $\text{Zn}(\text{C}_6\text{H}_{11})_2$, tin bis(bis(dimethylamide)) $[\text{Sn}(\text{N}(\text{CH}_3)_2)_2]_2$, tin dicyclopentadienyl $\text{Sn}(\text{C}_5\text{H}_5)_2$, and indium cyclopentadienyl $\text{In}(\text{C}_5\text{H}_5)$.

45-49. (cancelled)

50. (currently amended) A process for the preparation of a composition of nanoparticles of at least one crystalline metal oxide from at least one organometallic precursor, said process comprising consisting essentially of:
- selecting at least one organometallic precursor that is spontaneously reactive to oxidation,

- producing a liquid solution of said at least one precursor in a non-aqueous solvent medium, and

- contacting said liquid solution with at least one oxidizing agent at a temperature in a range from 0 ° to less than 50° C under reaction conditions chosen so as to directly bring about the production of nanoparticles of crystalline metal oxide(s).